

Variation in Settlements during the Longshan Period of Northern China



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THE LONGSHAN PERIOD of the Huanghe River valley is extremely important for examining the development of complex societies. Because archaeology in China is regarded as a historical discipline (Olsen 1987), much research on the Longshan Period has involved identifying the cultural antecedents of the subsequent Xia, Shang, and Western Zhou dynasties (Pearson and Underhill 1987). Another important concern has been documenting the emergence of key elements of Chinese civilization. These elements include urbanism, writing, bronze metallurgy, and social stratification as indicated by burials (Du 1991; Editorial Department of Kaogu 1992; Ma 1992; Qu 1989; Yan 1992). The discovery of several large walled sites during the past decade has provided impetus for work of this kind. Researchers focus on the Longshan Period from the Huanghe River valley in their discussions about the origins of Chinese civilization, but they also recognize the importance of other areas such as the middle Yangzi River valley, where walled sites from the Qujialing Culture have been discovered (Yan 1994; Zhongguo Wenwu Bao 1992a).

Several recent publications are devoted to documenting and explaining variation in walled sites from the Longshan Period, referred to as "castles" (*chengbao*) or "city sites" (*chengzhi*) by many authors, to trace the development of urbanism (He 1989; Ma 1992; Qu 1989; Sui 1988; Yan 1992; Zhang 1993). The development of writing is a topic that has gained much attention during the last few years with the discovery of a sherd at the walled site of Dinggong in Shandong Province with incised marks that scholars suggest represent writing (Shandong University, Department of History, Archaeology Specialty 1993; Wang et al. 1993). Evidence for bronze metallurgy at walled sites and other sites has also been an important topic of research during the past several years (Underhill 1990a, 1992, 1995).

The objective of this paper is to examine variation in settlements of the Longshan Period from a different, but complementary, perspective. Along with other categories of data, data on settlement variability are necessary for the documentation of changes in the nature and degree of social complexity in an area. It is important to determine components of cultural systems that become more com-

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plex over time and the rate at which change occurs (McGuire 1983; Spencer 1990; Yoffee 1993). Published data from the Chinese archaeological literature permit an exploratory analysis of geographic and temporal variability in walled settlements from the Huanghe River valley. The propositions presented here could be tested in more detailed studies about the development of social complexity in individual regions.

The lack of systematic regional settlement surveys in the Huanghe River valley precludes a detailed examination of individual settlement systems, identification of regional settlement hierarchies, or an initial examination of intersite interaction. Research in other areas (Wright 1984, 1986) has shown that changes in regional settlement patterns may reveal changes in regional sociopolitical organization such as the establishment of new centers of power or increases in power of existing polities. Published data for the Longshan Period of the Huanghe River valley permit examination of geographic and temporal variation in walled settlements only on a macro level. Future studies should examine change over time in settlement systems within individual regions. Researchers should compare contemporary settlements in each region with respect to size, kinds of architectural features, evidence of craft production, diversity of artifacts present, and so forth, to identify settlement hierarchies.

In the following sections of this paper, I analyze and synthesize variation in walled sites from the Huanghe River valley. Published data exist for nine sites. I discuss approaches to investigating change in sociopolitical organization, date of construction, size of enclosures, structural features of walled enclosures, remains of structures that were probably used by elites, evidence for craft production, and site function. For the Longshan Period in general, published data on internal settlement organization are limited. There are descriptions of a relatively large sample of houses for only two sites. In the last section of this paper, I examine variation over time in houses at these sites, one of which has a walled enclosure. I analyze variation in construction material, floor size, and location to ascertain whether there was change over time in status differentiation as indicated by housing.

A wide range of materials should be analyzed to adequately document change in the nature and degree of sociopolitical complexity during the Longshan Period. Published information on architectural features at walled sites is more abundant than information on craft production or the spatial distribution of artifacts. Data on burials at these sites are limited and preclude inferences about change over time in social differentiation. More information on the criteria used to identify the function of structures is needed as well. More fieldwork at these important sites will no doubt continue to provide data useful in examining the development of social complexity.

INVESTIGATION OF SOCIOPOLITICAL COMPLEXITY DURING THE LONGSHAN PERIOD

Archaeologists in China have identified seven different regional variants or "types" (*leixing*) of Longshan Culture in the Huanghe River valley (Fig. 1). Sites date from c. 2600 to 1900 B.C. The degree of regional variation indicates that "Longshan" should refer to a time period rather than to a single culture (Yan

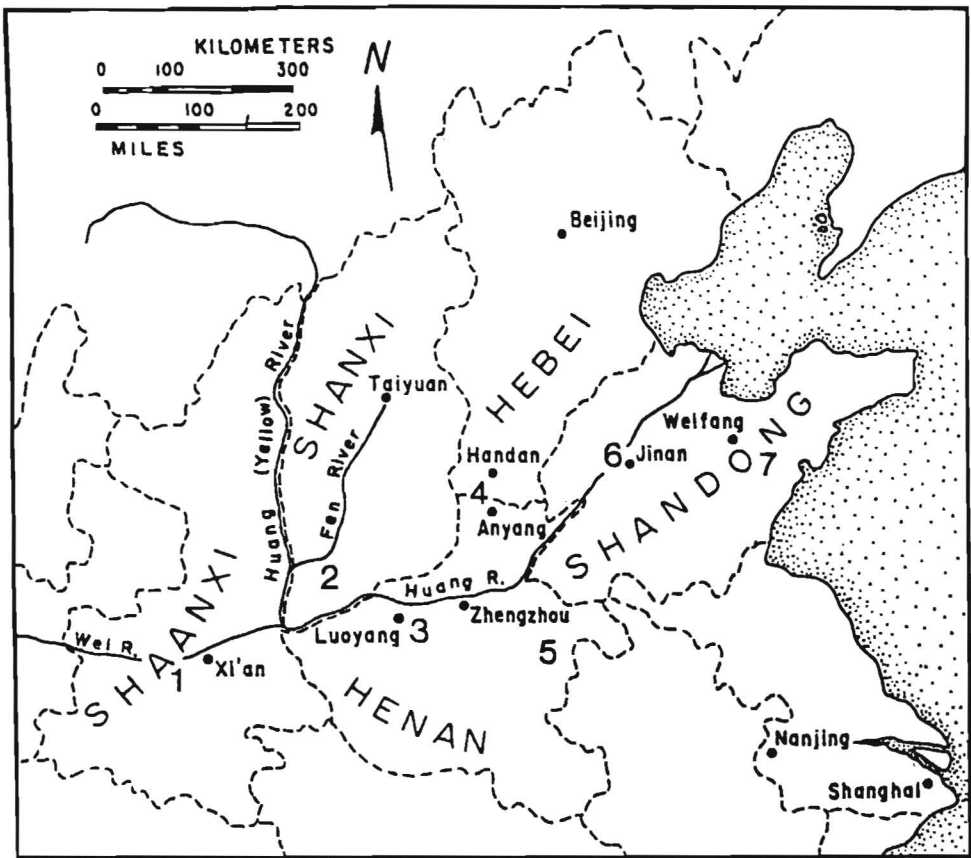


Fig. 1. Types of Longshan Culture in the Huanghe River valley of northern China: 1, Kexing-zhuang II; 2, Taosi; 3, Wangwan III; 4, Hougang II; 5, Wangyoufang; 6, Chengziyai; 7, Liangcheng.

1981). These seven regional variants have been identified on the basis of similarities in artifacts, especially pottery. All of them are named after key sites that were among the first discovered in their area. These regional variants are important in tracing historical development. For example, the Wangwan III and Taosi regional variants are considered the direct predecessors of the Erlitou Culture, thought to be representative of the Xia Dynasty. The Hougang II *leixing* is considered as one of the major cultural antecedents to the Shang Dynasty (Yan 1986). It is likely that the geographic area associated with each of these regional variants contained more than one complex polity. State formation may also have occurred in more than one area (Chang 1983a, 1983b).

The nine large sites with walls of rammed earth (*hangtu*) from the Longshan Period have been found in areas associated with five of the *leixing* defined by archaeologists (Fig. 2). The sites from the Wangwan III area of west-central Henan Province are Wangchenggang (Dengfeng County) and Haojiatai (Yancheng County). The walled site of Hougang (near Anyang city, Henan) is located in the Hougang II area of northern Henan and southern Hebei Provinces. It is likely that the newly discovered site of Mengzhuang (Huixian County, Henan) also

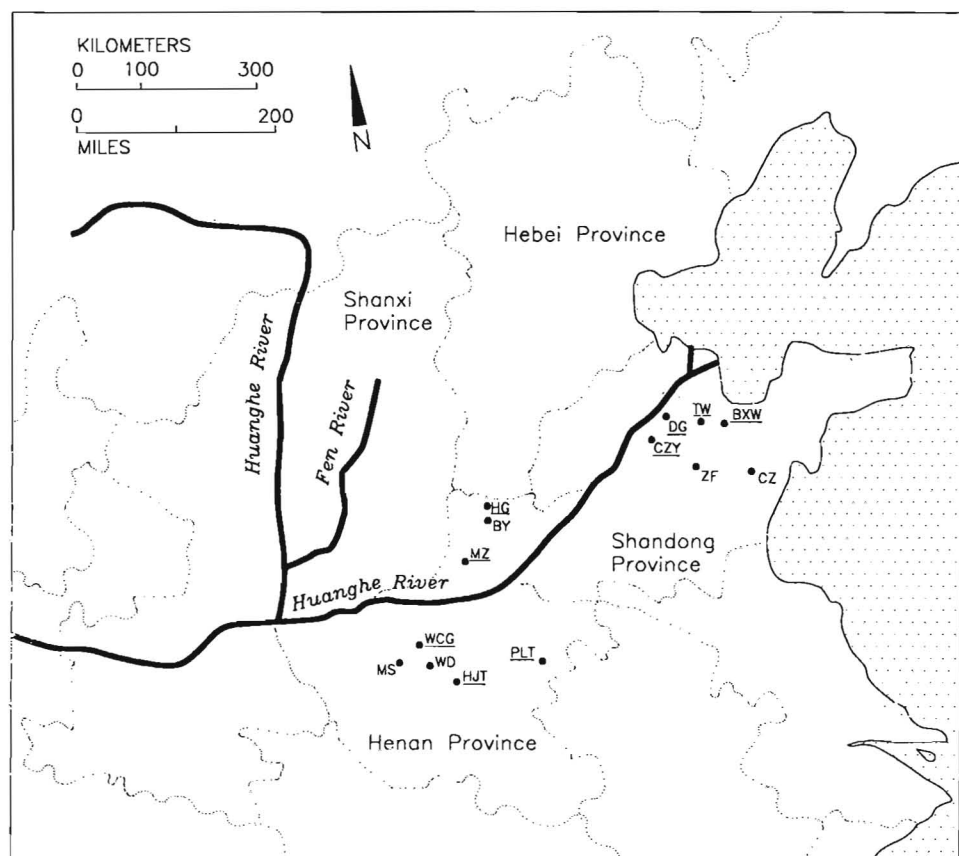


Fig. 2. Location of sites from the Longshan Period discussed in the text (walled sites are underlined). In Henan Province: HG, Hougang; BY, Baiying; MZ, Mengzhuang; WCG, Wangchenggang; MS, Meishan; WD, Wadian; HJT, Haojiatai; PLT, Pingliangtai. In Shandong Province: BXW, Bianxianwang; DG, Dinggong; CZY, Chengziyai; TW, Tianwan; ZF, Zhufeng; CZ, Chengzi.

should be classified as from the Hougang II *leixing* (Yan Wenming, pers. comm., 1993). The Wangyoufang area in eastern Henan contains one walled site, Pingliangtai (Huaiyang County). The famous site of Chengziyai (Zhangqiu County) is located in the Chengziyai (or Chengziya) area of western Shandong Province. Recently, scholars have concluded that some of the remains at Chengziyai date to the Longshan Period but others are post-Longshan (Zhang 1993). Three walled sites have been found in the Liangcheng area farther east in Shandong: Dinggong (Zouping County), Tianwan (or Tonglin, Linzi District), and Bianxianwang (Shouguang County). Published information on three of these sites, Mengzhuang (Zhongguo Wenwu Bao 1992b), Dinggong (Shandong University, Department of History, Archaeology Specialty 1993; Zhongguo Wenwu Bao 1992c), and Tianwan (Cultural Gazetteer of Linzi 1990), has appeared for the first time within the last few years.

I have suggested (Underhill 1990a, 1992, 1995) that the term "chiefdom" is appropriate to characterize the political units that existed during the Longshan

Period and that the walled sites represent centers within regional settlement hierarchies. I use the term "chiefdom" in a generic sense to refer to societies with regional settlement hierarchies as well as social and economic differentiation that may be expressed, for example, in burials, housing, and/or competition between elites for labor-intensive prestige goods (see Earle 1987, 1991). I do not assume, however, that the processes by which competition for political, economic, and/or ideological power took place during the Longshan Period were exactly the same as in other areas where prehistoric chiefdoms occurred. As Feinman (1991:230–231) points out, the term "chiefdom" refers to societies that are similar in the structure of sociopolitical organization but that do not necessarily share specific characteristics.

Systematic regional settlement surveys will be necessary to test the hypothesis that settlement hierarchies existed during the Longshan Period and that walled sites represent centers. However, preliminary data support this hypothesis. It appears that most of the walled settlements are larger in size than other sites from the Huanghe River valley. Yan (1994) states that several small and medium-sized settlements (without walled enclosures) have been found in areas around large walled sites. The presence of architectural features representing a substantial amount of human labor such as the walls and large structures within the enclosed areas also suggests that walled sites were centers of regional political units. Only walled settlements from the Longshan Period contain relatively large structures that may represent elite residences or public buildings. Archaeologists working in other areas of the world have identified centers of settlement hierarchies in chiefdoms on the basis of similar criteria. Centers in other areas tend to be large and have architectural features that represent relatively great amounts of labor input (Earle 1987; Feinman 1991; Steponaitis 1991).

In addition, walled settlements from the Longshan Period in the Huanghe River valley exhibit structural similarities to probable centers from the Early Dynastic Period—the Erlitou Culture (considered by archaeologists to represent the Xia Dynasty) and the Shang and Zhou Dynasties (Chang 1983a, 1983b, 1986). Zhou texts state that walled towns from the Early Dynastic Period were centers of political units where elites and their kin resided (Chang 1983b:25). The surrounding walls from both the Longshan and Early Dynastic Period sites are made of rammed earth (*hangtu*), a labor-intensive technique. In addition, the Longshan and Early Dynastic Period walled sites contain large building foundations of rammed earth.

Data obtained from systematic regional surveys should be used to examine variation in size of walled and other sites, architectural features, and the distribution of prestige goods to determine if there were different kinds of centers. It is also necessary to obtain more information on the roles of elites during the Longshan Period. Social ranking may have been defined on the basis of political, economic, and/or ideological power. Criteria for identifying elites could include the presence of prestige goods in large residences. It is likely that construction of walled enclosures and large buildings from rammed earth required the ability of elites to mobilize labor, but it is also possible that walled enclosures and large structures with rammed-earth foundations were built by cooperative labor. Finally, more work should be done to identify other groups of people, such as craftspeople, that lived at walled sites.

An increasing number of archaeologists in China maintains that the Longshan Period is characterized by states rather than by middle-range societies such as chiefdoms. Many argue that the walled site of Wangchenggang in the Wangwan III area represents the Xia Dynasty (An 1983, 1989; Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992). Yan (1994) argues that numerous states varying in size and power existed during the Longshan Period. In addition, he advocates an expanded definition of the "Longshan Period." He maintains that walled settlements after c. 3000 B.C. in two other areas, the middle reaches of the Yangzi River (walls of rammed earth) and south-central Inner Mongolia (walls of stone), also date to the Longshan Period. Walled settlements from the Huanghe River valley represent the late phase of the Longshan Period. Yan (1994) argues that the discovery of more than 20 walled sites in these three areas provides support for comments in ancient texts that there were numerous states before the Early Dynastic Period. He expects that more walled sites will be discovered in a variety of areas.

The level of sociopolitical complexity represented by walled settlements from the Longshan Period of the Huanghe River valley is an issue that will continue to be debated. In my view, there are qualitative differences between archaeological remains from the Longshan and Early Dynastic Periods. Remains that are potentially indicative of differences in degree of sociopolitical complexity are size of walled settlements and size of structures that may represent elite buildings (Tables 1, 2, 3). However, the suitability of specific terms to apply to the Longshan Period, such as "chiefdom," "state," and "civilization," is not the most important issue. Instead, it would be more useful to examine individual regions, such as the several regions of the Huanghe River valley, over time to document the nature and rate of sociopolitical change, enabling estimates of increase in degree of cultural complexity to be made. General theories about state formation in northern China proposed by scholars such as Carneiro (1987) could thus be tested in individual regions within this broad geographic area. It is also evident that scholars can no longer regard the Huanghe River valley as the only area in China where early complex societies developed (Yan 1994).

Researchers should examine individual regions for evidence of an increase in political centralization over time from changes in settlement pattern (Wright 1984, 1986) and other lines of evidence. For example, sites located in western Henan Province from the Early Longshan Period to the first three periods of the subsequent Erlitou Culture could be investigated to determine the phases in which an increase in political centralization took place. Many characteristics that appear to represent a state level of complexity date to Period III of the Erlitou Culture rather than to Periods I or II (Underhill 1990b). The phase in which a state emerged in western Henan might be identified by a change in the structure of rank-size graphs for settlement pattern.¹ Other criteria that may indicate the emergence of states include planned centers and large-scale public works (Wright 1986:339). An increase in the power of elites at settlements in the Huanghe River valley might be indicated by a marked increase over time in size of rammed-earth foundations or walled enclosures (see also Trigger 1990:120–121). The discovery of more remains from the early phases of the Erlitou Culture will help researchers investigate the development of social complexity in western Henan. For example, a large building, 2400 m² in area, was recently found

TABLE 1. LARGE, WALLED SITES FROM THE LONGSHAN PERIOD—FROM WEST TO EAST, HENAN PROVINCE

	WANGCHENGANG	HAOJIATAI	MENGZHUANG	HOUGANG	PINGLIANGTAI
Area Date	Wangwan III Wall built Period II, c. 2455 B.C.; site occupied from Periods I to V, until c. 1900 B.C.	Wangwan III Wall built Period II, c. 2600 B.C.; site occupied through Period V	Hougang II Middle and Late Longshan Period, c. 2300–2000 B.C.	Hougang II Wall built during Middle Period, c. 2500–2300 B.C., probably closer to 2300 B.C.	Wangyoufang Wall built before Period III, before c. 2400 B.C. (probably Period II); site occupied c. 2500–2000 B.C., Periods I–V
Structural features	Possible gate; traces of rectangular rammed-earth building foundations in western enclosure: 2 at c. 150.0 m ² and 70.0 m ² ; metallurgy, Period IV	Ditch; houses from Periods II, III; 1 large Period III structure 97.9 m ² ; pottery production (tools, Periods III–V; 2 kilns, Period V); some burials from Periods III–V	Moat c. 5.7 m deep	37 circular houses from the Middle and Late Periods, some have adobe walls; pottery production (1 kiln, tools)	2 gates, 2 guardhouses moat c. 30.0 m wide; c. 12 adobe rectangular structures, some on rammed-earth platforms; 2 c. 54.4 m ² and 85.5 m ² ; metallurgy, pottery production (3 kilns)
Size of enclosed area	Western enclosure close to 1.0 ha	6.5 ha, but unclear if enclosed area or whole site	16.0 ha	Unclear, only 70.0 m of enclosure remains (whole site area 10.0 ha)	3.4 ha inside the enclosure, 5.0 ha including the outside portion of the walls

TABLE 2. LARGE, WALLED SITES FROM THE LONGSHAN PERIOD—
FROM WEST TO EAST, SHANDONG PROVINCE

	CHENGZIYAI	DINGGONG	TIANWAN	BIANXIANWANG
Area	Chengziyai	Chengziyai	Liangcheng	Liangcheng
Date	Early, Middle, Late Long- shan Period, c. 2500– 1900 B.C.	Entire Long- shan Period, but date of construction not clear	Early and/or Middle Longshan Period	Middle–Late Long- shan Period (c. 2300–1900 B.C.)
Structural features	No published information, remains re- cently reas- sessed	Ditch; c. 20.0 m wide, 68 houses, 62 burials, 1 pottery kiln	No published information	3 gates (east, west, north walls)
Size of enclosed area	20.0 ha	11.0 ha	15.0 ha	Inner enclosure 1.0 ha, outer enclo- sure c. 5.7 ha and somewhat later in time

at the Erlitou site that is estimated to date to Period I of the Erlitou Culture (Zhongguo Wenwu Bao 1993).

DATING OF WALLED SITES

It appears that several walled sites were established for the first time in the Huanghe River valley during the early phases of the Longshan Period (c. 2600–2400 B.C.). These early sites (Tables 1, 2) occur in more than one area. Radio-carbon dates are available for three sites from Henan Province: Wangchenggang (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1983, 1992; Zhang and Zhang 1986:53), Haojiatai (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992; Renmin Ribao 1986), and Pingliangtai (Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983; Zhang and Zhang 1986:53). The earliest reported date is that for the wall at Haojiatai, said to have been constructed during Period II, before c. 2650 B.C. (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992:90–91). This date may be about 200 years too early, because the authors of the site report equate Period III at the site with Period I at Meishan, which I estimate at c. 2300–2100 B.C. (Underhill 1990a:14, 1995).

It now appears that some of the walled sites in Shandong Province were also established during the Early Longshan Period. Archaeologists maintain that Chengziyai (Zhang 1993) and Dinggong (Shandong University, Department of History, Archaeology Specialty 1993) were occupied during the Early, Middle, and Late Longshan periods. Another recently discovered site, Tianwan (Tonglin), may date to the Early or Middle Longshan periods (Zhang 1993).

The four walled sites in Shandong (Table 2) are c. 35–50 km apart. Some

TABLE 3. CHARACTERISTICS OF MAJOR EARLY DYNASTIC PERIOD SITES FROM THE HUANGHE RIVER VALLEY OF CHINA

	ERLITOU	SHIXIANGGOU	ZHENGZHOU	ANYANG
Location	Yanshi County, Henan	Yanshi County, Henan	Zhengzhou City, Henan	Near Anyang City, Henan
Date	Primarily Periods III and IV, Erlitou Culture (Thorp 1991:32-33)	Middle Shang Dynasty, contemporary with Zhengzhou (Huber 1988:52)	Middle Shang Dynasty (An 1986:27-28)	Late Shang Dynasty (Chang 1980)
Size of enclosed area	No wall discovered	206.6 ha (my calculations; Huber 1988:52)	334.7 ha (my calculations; An 1986:22)	No wall discovered
Size of rammed-earth platforms	Palace 1 (F1) compound 10,800.0 m ² (An 1986:32), one separate hall 346.6 m ² ; palace 2 (F2) (compound) 4234.0 m ² and hall 384.0 m ² (Thorp 1991:12, 14)	Foundations for a palace 1496.5 m ² (my calculations)	Several rammed-earth foundations; elite residential, administrative, and/or ceremonial functions (Huber 1988:49, An 1986:38-41)	At Xiaotun, 53, some with wattle and daub walls for structures on top; 2 large ones 1232.5 m ² , 2800.0 m ² ; palaces and temples (Chang 1980:92; my calculations)
Site function	Palaces 1 and 2 in zone V, an elite residential, administrative, and/or ceremonial area; bronze production zone south of the elite area (Thorp 1991:6, 8)	Elite residential, ceremonial, and/or administrative area	Elite residential, ceremonial, and/or administrative area inside the walls; craft production areas outside the walls (An 1986:39, 43)	Xibeigang: elite cemetery; Xiaotun: elite residential, ceremonial, and/or administrative area; some craft production

archaeologists argue that the relative proximity of these sites indicates that they formed an important part of the territory of an individual state (Shandong University, Department of History, Archaeology Specialty 1993:298; Wang et al. 1993:375). Future work at Chengziyai, Dinggong, Bianxianwang, and Tianwan should clarify the phases of occupation represented, and other lines of evidence, such as common styles of artifacts representing a state ideology that could support this interesting proposal, may be recovered.

The chronological data indicating initial establishment of walled sites in several areas c. 2600–2400 B.C. suggest a period of rapid cultural change characterized by greater intensity in competition for power among elites. It is likely that concern for defense of resources by elites as a result of increasing warfare was a causal factor in the establishment of walled settlements (Underhill 1989, 1992; Yan 1994). The nature of structural features at walled settlements (discussed below) supports this hypothesis.

The chronological data suggest that a second phase of construction of walled sites in the Huanghe River valley took place c. 2300–2000 B.C. It appears that at least two walled sites, Mengzhuang in Henan and Bianxianwang in Shandong, were built at that time. Dating is assessed on the basis of ceramic styles (Renmin Ribao 1985; Zhongguo Wenwu Bao 1992b). The wall at Hougang, discovered during the 1931–1934 excavations (Anyang Archaeological Team, IA, CASS 1985:33), is estimated to have been built during the Middle Period, c. 2500–2300 B.C. (Qu 1989:267). Sui (1988:47) maintains that the wall was built at the end of the Middle Period and, therefore, close to 2300 B.C. (see Underhill 1992:175).

Systematic regional survey in specific regions of the Huanghe River valley should determine whether there is supporting evidence for more than one phase of construction of walled sites. This pattern could indicate the development of new centers of political power. As in the Near East and other areas (Wright 1984, 1986), fluctuations in competition for power may have led to the decline of some walled settlements and the establishment of others.

SETTLEMENT SIZE AND STRUCTURAL FEATURES OF WALLED ENCLOSURES

Henan Province

There is intriguing variation in estimated size of walled enclosures at the Longshan sites (Tables 1, 2). These data suggest that the initial walled sites in Henan Province were small and that larger settlements were established later.

Although many archaeologists believe that Wangchenggang represents the early phases of the Xia Dynasty (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992), it is the smallest walled settlement in the Huanghe River valley. Researchers conclude that there were actually two Longshan settlements here, because there are traces of a western and eastern enclosure. However, the nature of the eastern enclosure is unclear. It was poorly preserved, and excavations concentrated in the western enclosure. It appears that flooding from the nearby Wuduhe River destroyed portions of the walls as well as deposits within the enclosures. The walls of the western enclosure are c. 92.0 m (north-south) and 82.4 m (east-west) long. No

portion of the wall was visible on the surface. Archaeologists estimate from rammed-earth foundations that each side of the square enclosure is roughly 90.0 m long and that the western enclosure is c. 1.0 ha in area (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992:31). They suggest that a gap in the southern wall 9.5 m wide indicates the presence of a gate.

The enclosure at Pingliangtai, another site in Henan with good radiocarbon evidence for wall construction in the Early Longshan Period, is also small, c. 3.4 ha (Cao 1990; Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983). Archaeologists estimate that each side of the square enclosure here is 185.0 m long. They discovered portions of the wall that are from 8.0 to 13.0 m wide (widest at the base) and more than 3.0 m tall. Gaps in the northern and southern walls suggest the existence of gates, and two structures in the southern wall have been interpreted as guard-houses (Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983:27–28). Tian (1986) states that there is a moat at the site c. 30.0 m wide.

The probable early site of Haojiatai in Henan is also relatively small, c. 6.5 ha. Sections of the wall that remain are c. 5.0 m wide and 0.8 m high. Reports mention a ditch (*haogou*) but do not provide information on dimensions (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992:62, 64; Renmin Ribao 1986).

The site of Mengzhuang, probably built about 100 years later than the three sites discussed above, is the largest reported walled site in Henan Province, at c. 16.0 ha (Yan 1994; Zhongguo Wenwu Bao 1992b). Like other walled settlements in Henan, Mengzhuang is square, and each side of the enclosure is estimated at 400.0 m in length. The width of the wall is 8.5 m at the base and 5.5 m at the top (Yan 1994; Zhongguo Wenwu Bao 1992b). It appears that the large site of Mengzhuang is not an exception, however, because Yan (1994) states that at least one other walled site in the Huanghe River valley has been discovered that is larger. Reports indicate that Mengzhuang also has a moat (*huchenghe*) 5.7 m deep (there is no information on the width [Yan 1994; Zhongguo Wenwu Bao 1992b]).

The size of the walled enclosure at Hougang is difficult to ascertain. A small portion of the wall, c. 70.0 m long and 2.0–4.0 m wide, was discovered during excavations from 1931 to 1934 (Anyang Archaeological Team, IA, CASS 1985:33). Archaeologists estimate that the site is c. 10.0 ha (Anyang Archaeological Team, IA, CASS 1985:33), but it is not clear if this value represents the original size of the walled enclosure.

Systematic regional settlement survey will be necessary to test the hypothesis of an increase in size of walled sites over time. One possible causal factor for this proposed increase is that elites were able to increase their power over other settlements in the region. The process also may have resulted in the development of more levels in a regional settlement hierarchy. For example, a new kind of center may have developed, resulting in major and minor centers. The most powerful elites would have resided in and controlled the largest walled settlements, the major centers. The relatively large size of Mengzhuang (16.0 ha) could indicate that it was a major center sometime during the period 2300–

2000 B.C. This size is comparable with that of sites identified as major centers from the Late Prehistoric period in southwestern Iran, and the other walled sites in Henan Province are comparable with minor centers (Wright 1984:53). Archaeologists should also consider other possible causes for increase in size of walled settlements over time. For example, factors such as improvements in agricultural technology could have caused populations to increase throughout a region.

Shandong Province

Most of the walled settlements in Shandong are relatively large. Chengziyai is reported as the largest, c. 20.0 ha (Yan 1994; Zhang 1993). This figure is close to the early estimate of 17.6 ha as reported by Li (1956:62). Chengziyai is described as a terraced city (*taicheng*). Because the settlement was built on elevated ground, the height of the walls appears even greater from the exterior (Yan 1994).

Archaeologists estimate that the enclosure at Dinggong is c. 11.0 ha. The wall running north-south is c. 350.0 m, and the wall running east-west is 310.0 m. Remaining portions are 1.5–2.0 m high (Yan 1994; Zhang 1993; Zhongguo Wenwu Bao 1992c). The settlement at Dinggong is surrounded by a ditch (*chenghao* or *haogou*) that is more than 20.0 m wide (Shandong University, Department of History, Archaeology Specialty 1993; Yan 1994; Zhongguo Wenwu Bao 1992c). The excavators may not be certain whether the ditch at Dinggong and at Haojiatai contained water, because they do not use the term describing the moat at Mengzhuang, *huchenghe*. However, it is likely that archaeologists in Shandong and Henan Provinces use somewhat different terms to refer to the same kind of feature. Published reports do not describe criteria demonstrating that these ditches were filled with water during the Longshan Period.

The walled settlement of Tianwan is c. 15 ha and more rectangular in plan (Yan 1994; Zhang 1993). It may also be described as a terraced city or *taicheng* (Yan 1994).

Bianxianwang has different structural features and is much smaller than other reported walled sites in Shandong. It has both an inner and outer enclosure, both irregular in shape, with the inner enclosure c. 1.0 ha and the outer c. 5.7 ha (Yan 1994; Zhang 1993). There is evidence of gates (apparently, gaps) in the east, west, and north walls. The southern gate must lie underneath a modern village (Yan 1994). The walls were not visible on the surface before excavation. They vary in width from c. 2.0–4.0 m to 6.0–8.0 m (Yan 1994). The outer enclosure represents a rebuilding episode that enlarged the settlement (Sui 1988:48; Yan 1994; Zhang 1993). According to Zhang (1993), the inner enclosure dates to the later portion of the Middle Longshan Period, and the outer enclosure dates to the earlier portion of the Late Longshan Period.

Zhang (1993) maintains that Bianxianwang represents a different form of city than the other walled sites in Shandong. He describes the other three walled sites as terraced cities or *taicheng*. Bianxianwang, however, was built at ground level. The possibility that it was established at a later date than the other walled sites in Shandong (Table 2) may indicate that the structure of walled settlements in Shandong changed over time.

Discussion

Whether walled settlements in the Huanghe River valley were built at ground level or on elevated ground, it is likely that protection of inhabitants was a priority. Archaeologists maintain that increased warfare during the Longshan Period resulted in the establishment of fortified settlements with walls of rammed earth, or *chengbao* (Yan 1994). I have suggested (Underhill 1989, 1990a) that there is evidence for an increase in warfare over time during the late Neolithic Period in northern China from increases in skeletal remains indicating violent death and in possible weapons at sites. More evidence of this kind is needed to test the hypothesis that increases in intensity, scale, and/or frequency of warfare took place during the Longshan Period of the Huanghe River valley and that warfare was an important factor in the development of sociopolitical complexity.

Structural features at walled sites such as the ditch and possible guardhouses at Pingliangtai as well as the surrounding ditches at Haojiatai, Mengzhuang, and Dinggong support the hypothesis that defense was an important concern. The wider base of the walls at sites such as Wangchenggang may have served to further protect residents from attack (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992). Some archaeologists have suggested that walled settlements were also built to protect people from flooding (Du Zaizhong, pers. comm., 1987). Building settlements on elevated land (*taicheng*) would have been especially effective.

The published data on size of walled settlements from the Longshan Period in the Huanghe River valley suggest that the terms "urbanism" and "city" are not appropriate. The walled enclosures are very small compared with walled settlements from the Early Dynastic Period (Table 3; see also Barnes 1993:127). The size range represented is similar to that of sites in the Near East that have been called "towns" (see Wright 1984:53).

SETTLEMENT ORGANIZATION

Architecture

Five sites (Pingliangtai, Wangchenggang, Haojiatai, Hougang, and Dinggong [Tables 1, 2]) have yielded information on structures inside the walled enclosures and remains of materials with significance for site function. Complete reports are available at present only for Wangchenggang (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992) and Hougang (Anyang Archaeological Team, IA, CASS 1985). Large structures that may have been elite residences as well as evidence of metallurgy and pottery production have been found at the five sites.

Pingliangtai and Wangchenggang have remains of large, rectangular structures. At Pingliangtai, some of the large structures were built on platforms of rammed earth. About 12 large adobe structures have been found, most of which have rammed-earth foundations and separate rooms (Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983; Yan 1994). It is likely that these structures represent elite residences (Yan 1994).

Poor preservation conditions inhibit identification of buildings at Wangcheng-

gang. Archaeologists have estimated the location of buildings from the location of rammed-earth foundations, other traces of rammed earth, and rammed-earth pits with internment of bodies that seem to represent foundation-laying ceremonies. They have concluded that a total of ten rammed-earth building foundations of different sizes is in the western enclosure of the site (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992:41). They have estimated that many of the large, rammed-earth foundations were built at the same time the wall was constructed, Period II (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992; Yan 1994).

At Haojiatai, remains of a large structure without rammed-earth foundations from Period III could indicate an elite residence (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992:64). Large foundations of comparable size (c. 50.0–100.0 m²) have not been reported for other sites from the Longshan Period. Apparently, the other houses found at Haojiatai are relatively small, probably similar in size to the circular houses at Hougang (discussed below).

Five seasons of excavation at Dinggong have identified 68 houses, also relatively small in size (Shandong University, Department of History, Archaeology Specialty 1992:496, 1993:295; Shandong University, Department of History, Archaeology Specialty and the Zouping County Bureau of Cultural Relics 1989:392–393). The presence of relatively small houses made from materials other than rammed earth suggests that more than one category of people in addition to elites lived at these walled settlements.

At least some of the large, rectangular structures from Pingliangtai, Wangchenggang, and Haojiatai probably indicate elite residences or compounds, especially those built with rammed earth. Large rammed-earth foundations thought to represent elite buildings have been found in Early Dynastic Period sites such as Zhengzhou (Table 3). In other areas, differences in social rank are often symbolized by variation in housing, such as different architectural features, and especially spatial segregation of housing for elites (Wright 1984:44). More information on the spatial pattern of houses at walled sites is needed. For example, it is not clear whether the large structures (possible elite residences) at Haojiatai are spatially segregated from the smaller structures (possible houses of lower-ranking people).

Large structures at walled sites from the Longshan Period also may have served elite administrative and/or ceremonial functions, as Wiesheu (1993) pointed out for Wangchenggang and Pingliangtai. These structures may have been part of compounds used by elites such as the “halls” identified at Erlitou (Table 3). As in other parts of the world (Wright 1984), there may be structures at walled settlements used for storing tribute such as grain or craft goods from subsidiary settlements. Given the importance of ritual for social control in chiefdoms and early states, one should also expect to find structures or open spaces used for ceremonies at settlement centers (Wright 1984). There is no clear evidence for the occurrence of ceremonial activities in the form of temples or altars (Wiesheu 1993) at Longshan-Period walled sites in the Huanghe River valley. However, open spaces or courtyards may have been used for this purpose, as proposed for Erlitou (see Thorp 1991) and described in texts for Zhou sites (see Chang 1983b: 22).

Criteria for identifying the function of structures from the Longshan and Early Dynastic Periods need to be made explicit. A residential function, for example, could be identified on the basis of domestic artifacts and features such as hearths. Presence of prestige goods inside these large structures would provide supporting evidence for the hypothesis that they were used by elites. Systematic comparison between identified residences for differences in size and cost of construction material could also help identify elites.

Changes in architectural features at walled sites could indicate an increase in sociopolitical complexity. The appearance of features exhibiting centralized planning could indicate the emergence of a state (Wright 1986:339). Uniformity in construction methods of walled enclosures and large structures at Longshan-Period settlements might indicate centralized management of labor. Yan (1994) proposes that the degree of technical skill represented by walled settlements such as Pingliangtai, Mengzhuang, and Bianxianwang indicates that a complex society is represented. Pingliangtai is the only prehistoric site with such features as pottery pipes for removing waste water (Yan 1994). Other changes in architectural features that could indicate the development of states are the initial appearance of palaces and specialized structures for administrative activities (Wright 1984:44). Wiesheu (1990, 1993) points out that there is no evidence for very large structures indicative of palaces at sites in the Huanghe River valley until the Erlitou Period.

Burials

There are some pit burials at the walled sites of Haojiatai and Dinggong. Few burials other than pottery urns containing bodies of infants and children have been reported for any Longshan site in Henan. At Haojiatai, there are pit burials as well as urns from Periods III–V (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992:70, 76, 79). There are very few grave goods and no potential prestige items, such as jade artifacts, in these burials. One explanation is that the deceased represent lower-ranking people. Or the fact that some skeletons are missing a skull or hand could mean that warfare was the cause of death. There is no published information on characteristics of the burials at Dinggong (Shandong University, Department of History, Archaeology Specialty 1992:496, 1993:295).

Craft Production

There is evidence for craft production at Wangchenggang, Pingliangtai, Haojiatai, Hougang, and Dinggong (Tables 1, 2). Traces of metallurgy are evident from Period IV at Wangchenggang and Period III at Pingliangtai (Underhill 1992, 1995). At Haojiatai, there is evidence for pottery production during Periods III–V in the form of tools as well as two kilns from Period V (Henan Province Cultural Research Institute and the Yancheng County Memorial Hall of Xu Shen 1992). Pottery production probably also took place at Dinggong (Shandong University, Department of History, Archaeology Specialty 1993:295), Pingliangtai (Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983:31), and Hougang (Anyang Archaeolog-

ical Team, IA, CASS 1985). One kiln is reported for Dinggong. The period(s) during which the kilns at Pingliangtai were used are not clear; however, the report explicitly states that the kilns were found within the walled enclosure (Underhill 1991:22). Archaeologists found one kiln from the Middle Period at Hougang as well as tools for pottery production from each phase of occupation (Underhill 1991:20).

It is likely that elites competed to control production, distribution, and consumption of prestige goods during the Longshan Period. The relationship between change in production of prestige goods and development of sociopolitical complexity is an important issue (Brumfiel and Earle 1987) that should be addressed in more detail in this area (see Underhill 1990a). Prestige goods and raw materials used to make these goods were probably exchanged between elites on an intra- and inter-regional basis. More information on craft production areas and the distribution of prestige goods at walled and other sites is needed. Centers of regional settlement hierarchies can be expected to contain more prestige goods than other sites (Feinman and Neitzel 1984).

Metal items (copper, bronze) and labor-intensive pottery vessels may have been two kinds of prestige goods that were important in competition for power among elites (Underhill 1990a, 1992, 1995). Elites may have attempted to control distribution of copper and tin as well. Evidence of bronze metallurgy is not abundant for the Longshan Period, suggesting that problems were encountered in the technology. Most of the reported remains are controversial in terms of dating, chemical composition, or kind of object represented. Deposits from the Late Longshan Period at Wangchenggang (Period IV) have yielded the only possible fragment of metal that could represent a cast bronze vessel rather than a small tool. The kind of object as well as chemical composition of the metal fragment found at Pingliangtai are unclear. Metallurgical remains have been found at sites without walls such as Meishan (Second Henan Archaeological Team, IA, CASS 1982; Fig. 2) and at walled sites. This pattern could indicate that elites had not gained effective control of bronze production during the Longshan Period (Underhill 1995).

There is some indication that walled sites contain more labor-intensive pottery vessels than sites without walls (Underhill 1990a, 1992, 1995). Wangchenggang has more than one kind of finely made drinking vessel such as thin-walled, tall *gu* beakers (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992). Some authors maintain that pottery vessels from Period II at Wangchenggang in particular are more finely made than pottery at other sites in the area (Sui 1988:48). The walled site of Mengzhuang in the Hougang II area is said to have beautiful black, thin pottery (Zhongguo Wenwu Bao 1992b). However, elegant beakers also have been found at sites without walls in the Wangwan III area such as Wadian (Fig. 2 [Henan Province Cultural Research Institute and the Department of History, Zhengzhou University, Archaeology Specialty 1983]).

Similarly, finely made pottery vessels are reported for walled sites in Shandong Province. Zhang (1993) states that vessels at Tianwan and Chengziyai are more finely made than vessels from other sites in the area. "Eggshell thin" tall stemmed cups are reported for Dinggong (Zhongguo Wenwu Bao 1992c). These elaborate cups, usually less than 1 mm in thickness, are much more common in burial than

in habitation contexts. Archaeologists infer that they are associated with elite burials at cemeteries such as Zhufeng (Institute of Archaeology, Shandong Province 1990) and Chengzi (Archaeological Group of the Changwei Area and the Museum of Zhucheng County 1980; Fig. 2). No workshops for producing these labor-intensive vessels have yet been reported. The remains from Dinggong could indicate that "eggshell" vessels were used in displays of status in habitation contexts as well as mortuary ritual. It is important to assess whether vessels of this kind were made at the settlement.

Additional work remains to be done on other possible prestige goods produced, exchanged, and displayed by elites during the Longshan Period such as items of jade and turquoise. The initial report for Haojiatai mentioned the presence of jade at the site (Renmin Ribao 1986). One small, broken jade ring was recovered from Period III deposits at Wangchenggang (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992:84), and turquoise ornaments were found in Period II deposits (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1983:11). It appears that jade and turquoise items are more common in Longshan Period cemeteries than in settlements (Underhill 1990a). Alternatively, it is possible that recovery techniques for removing large quantities of earth during excavation of walled settlements inhibit discovery of small ornaments of jade and turquoise. Jade objects have been recovered in cemeteries in Shandong such as Zhufeng (Institute of Archaeology, Shandong Province 1990), and future studies should assess whether or not mortuary ritual was the primary context in which prestige goods such as jade and turquoise were displayed during the Longshan Period.

Walled sites from the Longshan Period should be investigated for the probability that prestige goods were produced by a system of attached specialization (Costin 1991), documenting the relationship between elite residences and production areas for labor-intensive goods. The remains of pottery production at Pingliangtai are intriguing in this regard. One of the three kilns found at the site is located at the north part of house F1, a large (54.4 m²), rectangular adobe structure from Period IV (Henan Province Cultural Research Institute and the Cultural Objects Division of the Zhoukou District 1983:30–31). More information on the kind(s) of pottery made in this kiln and the period(s) of use is necessary.

The role of emulation in motivating production of prestige goods during the Longshan Period should be addressed as well. Striking similarities in form and technique used to make labor-intensive pottery vessels especially suggest that there was much intersite interaction between elites in the Huanghe River valley. Peer polity interaction (Renfrew 1986) must have been an important process affecting elite efforts to control production, distribution, and consumption of similar prestige goods such as highly polished, thin-walled drinking vessels (Underhill 1995).

Independent specialization of production (Costin 1991) should also be investigated at walled sites and other sites within the same settlement system to assess whether or not there were changes in this kind of specialization in the context of increasing cultural complexity (Brumfiel and Earle 1987). It is likely that craft specialists made utilitarian pottery vessels and other goods, and that these utilitar-

ian items were exchanged between settlements. My study of vessels from Hougang and other Longshan sites suggests that a system of household specialization existed throughout the Longshan Period for all classes of pottery (Underhill 1990a, 1991). However, a relatively large sample of vessels from different kinds of sites within one settlement system is necessary to test this conclusion, and it is possible that more than one form of ceramic production existed in each region over time. Utilitarian vessels may have been made by family specialists in many sites and very labor-intensive vessels such as the "eggshell" cups by attached specialists in workshops at centers.

At walled Longshan settlements, craft production may have taken place outside the walled enclosure as well as inside. This appears to be the pattern at Shang sites such as Zhengzhou (Table 3; An 1986:39, 43; Chang 1986:337). This spatial pattern may prevail at Longshan sites because of the relatively small size of enclosures and the heat generated from kilns and smelting activities. Craftspeople could have lived within the walled enclosures (Qu 1989) or in outlying areas.

The possibility that craft production occurred outside the walled enclosures highlights the need to identify site boundaries carefully. The extent of occupied areas beyond the walled enclosures must be determined. Wiesheu (1993) expects that the small enclosure at sites like Wangchenggang would have served to protect major structures such as elite residences. Other parts of the settlement would have extended beyond the walled enclosure. This important hypothesis should be tested at walled sites. More work on identifying site boundaries may indicate that Longshan (and Early Dynastic) Period sites are larger than previously believed. More information on site boundaries is also necessary to adequately assess variability in settlement size for the Longshan and Early Dynastic Periods.

Settlement Function

Finally, there are debates about the functions of walled settlements in Chinese archaeological literature. I suggest that this issue cannot be addressed adequately until more data on site boundaries, function of structures, and regional patterns of production, exchange, and consumption of goods are available. Yan (1994) suggests that sites like Pingliangtai with evidence for craft production had more than simply a military function, but were regional centers of government and culture. Zhang (1993) states that the four walled sites from Shandong were centers of government, economy, culture, and the military. Therefore, they represent true cities. In contrast, He (1989:94) maintains that walled sites from the Longshan Period were not centers for economic and other activities. Their small size suggests that they had primarily a defense function.

Wiesheu (1993) argues that a major function of Wangchenggang and other walled sites must have been to separate and protect the resources of elites. I agree that this must have been an important function. I suggest that another priority was to protect access to prestige goods. Elites would have made an effort to protect workshops for production of these goods as well, whether they were located within the walled enclosure or just beyond.

More archaeological research can also recover evidence for growth and decline of centers in regional political hierarchies on the basis of data on craft goods. Remains from the walled site of Wangchenggang in west-central Henan may

indicate decline of a center over time. The authors of the excavation report (Henan Province Cultural Research Institute and the Archaeology Department, Museum of Chinese History 1992) and Li (1983:11) imply that Period II, the period of wall construction, contains most of the remains that may be indicative of a powerful elite such as labor-intensive pottery vessels. They indicate that there is a gradual decrease in these remains from Periods III to V. Other causal factors for this pattern such as decrease in population at settlements caused by epidemics should be considered as well.

Many questions pertaining to the structure and function of walled settlements from the Longshan Period are also relevant for interpreting major settlements from the Early Dynastic Period in the Huanghe River valley. Is it appropriate to refer to sites such as Erlitou as cities (Thorp 1991)? Were ceremonial activities most important at these settlements (Thorp 1991; Wheatley 1971)? Were these sites political and economic as well as religious centers (Chang 1980, 1983*b*), or only political and economic centers (An 1986:45)? Have scholars overemphasized the activities of elites and neglected to consider cooperative activities (McIntosh 1991)? Researchers should consider the possibility that the function of centers of settlement during the Longshan and Early Dynastic Periods may have changed over time and that during any given period there may have been centers with different functions, as Thorp (1991) suggested for the Erlitou Culture. The function of centers may have also varied regionally, as in Mesoamerica (Sanders and Webster 1988).

ANALYSIS OF HOUSES AT HOUGANG AND BAIYING

There are two settlements from the Longshan Period with extensive published descriptions of houses: the walled site of Hougang and the unwalled Baiying site (c. 3.4 ha [CPAM of Anyang District, Henan Province 1983:2]). Baiying is considerably smaller than Hougang (c. 10 ha, Table 1). Both Hougang and Baiying are located in the Hougang II area (Figs. 1, 2). At Hougang, 37 circular houses were excavated from the Middle (layer 5) and Late (layers 4 and 3) Periods (Anyang Archaeological Team, IA, CASS 1985). At Baiying, there are 62 circular houses and one rectangular house (of comparable size) from three periods (Early, Middle, and Late [CPAM of Anyang District, Henan Province 1983]). Archaeologists identify these structures as houses from the presence of hearths and domestic debris. There are no large, rammed-earth foundations at either site. The sites are roughly contemporary.²

The objective of this analysis is to assess whether or not there was change over time in status differentiation as symbolized by housing. I suggest that, as a walled site and therefore a possible center, Hougang especially should exhibit differentiation in housing in terms of wall construction material and floor size. The degree of status differentiation expressed in housing at either site could have changed over time because of fluctuations in the intensity and/or nature of status competition. An increase in competition could have resulted in greater differentiation in housing. Or, at any given time people could have decided to symbolize status with other kinds of materials.

Ethnoarchaeological studies and ethnographic data indicate that differences in household wealth are often symbolized by differences in cost of wall construction

TABLE 4. WALL CONSTRUCTION MATERIAL AT HOUGANG OVER TIME

TYPE OF MATERIAL	PERIOD		
	MIDDLE (LAYER 5)	LATE (LAYER 4)	LATE (LAYER 3)
Earthen (<i>tu</i>)	71.4%	50.0%	42.9%
Wattle and daub (<i>mu gu duo ni</i>)	7.1%	40.0%	21.4%
Adobe (<i>tu pi</i>)	14.3%	10.0%	14.3%
Unknown	7.1%	0.0%	21.4%
Total	14	10	14

TABLE 5. WALL CONSTRUCTION MATERIAL AT BAIYING OVER TIME

TYPE OF MATERIAL	PERIOD		
	EARLY	MIDDLE	LATE
Earthen (<i>sheng tu</i>)	44.4%	12.5%	0.0%
Mud and straw (<i>cao jin ni</i>)	11.1%	62.5%	73.9%
Wattle and daub (<i>mu gu ni</i>)	0.0%	25.0%	21.7%
Adobe (<i>tu pi</i>)	0.0%	0.0%	2.2%
Unknown	44.4%	0.0%	2.2%
Total	9	8	46

material as well as in floor area (Blake 1988; Feinman and Neitzel 1984; Netting 1982). Area of house compounds and number of structures per compound are other potential indicators of household wealth or economic status (Blake 1988: 56; Kamp 1987:287). Unfortunately, it is not possible to assess whether compounds are present at Hougang and Baiying, nor is it possible to use presence of prestige goods in houses as another line of evidence for identifying differences in status, because no clearly identifiable prestige goods were recovered in houses at these two sites (Underhill 1990a).

There are differences in wall construction material for housing at both Hougang and Baiying (Tables 4, 5). The reports identify four kinds of construction material: adobe, wattle and daub, mud and straw, and earth. Adobe houses were made of sun-dried clay bricks. Wattle and daub construction techniques appear to be the same as in other areas, where mud was placed over a lattice of wood. The third technique involves mixing mud and straw and building walls gradually by layers. It appears that the earthen houses at both sites were semisubterranean. At Baiying, the earthen houses (*shengtu*) were apparently dug out from the surface of the ground, and the walls were formed by the walls of earth that remained. The technique of earthen house (*tu*) construction at Hougang was nearly the same, except that the walls were made higher by gradually piling up more earth.

Adobe may be a construction material for elite housing at many Longshan settlements because it is associated with large rammed-earth building founda-

tions at Pingliangtai. Ethnoarchaeological studies indicate that adobe is a costly (labor-intensive, durable) building material in other areas (Blake 1988:51). Suitable material for making the sun-dried bricks could have been limited in availability as well. Because wattle and daub requires a variety of raw materials as well as considerable time and skill in construction, I suggest that it was a more costly building material than either mud and straw or earth.

A variety of wall construction materials is represented at Hougang and Baiying over time. At each site, houses with adobe walls are relatively rare during each period. Adobe houses are present during each period at Hougang but only appear during the Late Period at Baiying. The kinds of wall construction material hypothesized as less costly are relatively common over time at both sites.

At each site, houses with construction materials suggested to be more costly (adobe, wattle and daub) are not restricted to specific locations indicative of an elite residential area (Figs. 3–6).³ Both sites show evidence for rebuilding of houses over time within the broad periods identified in the reports. Some of the rebuilding episodes involve change to a more substantial wall construction material. For example, the earthen house no. 19 from the Middle Period at Hougang was replaced by an adobe house (no. 8, Fig. 3). At Baiying, the mud and straw

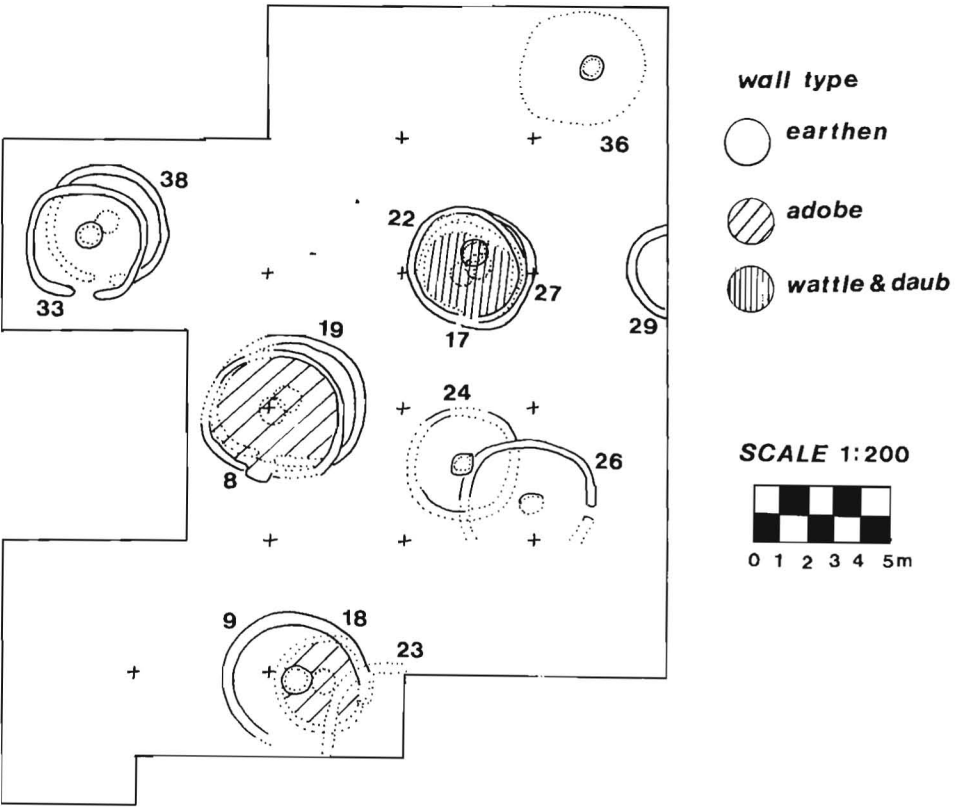


Fig. 3. Houses from the Middle Period (layer 5) at Hougang (after Anyang Archaeological Team, IA, CASS 1985:38, fig. 5). Numbers shown are numbers assigned to houses. Each small circle represents a hearth. Wall type unknown for house 36.

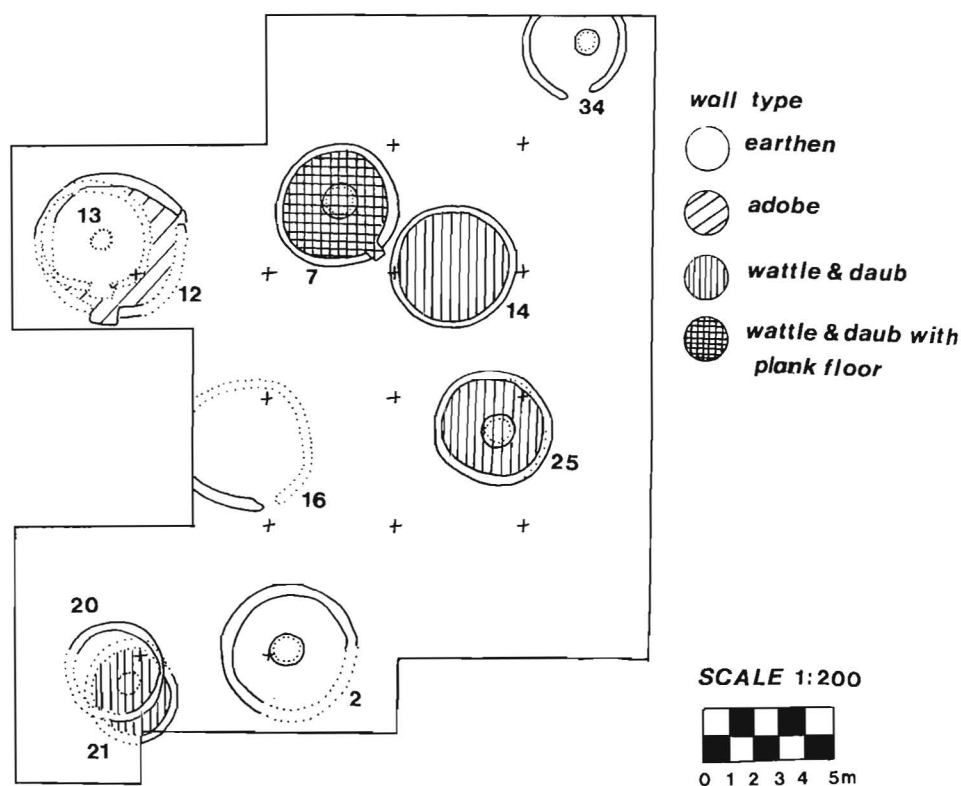


Fig. 4. Houses from the Earlier Phase of the Late Period (layer 4) at Hougang (after Anyang Archaeological Team, IA, CASS 1985:37, fig. 4). Numbers show houses; small Circles represent hearths.

house no. 1 was replaced by the larger, wattle and daub house no. 37 during the Late Period. Also, the mud and straw house no. 30 was replaced by the wattle and daub house no. 13. A new type of flooring, planking, appeared during the Late 4 Period at Hougang. However, this house has wattle and daub walls, is comparable in size with other houses, and is not spatially segregated.

Qu (1989:270) stated that the large number of houses discovered in a roughly 600-m² area (see Figs. 3–5) at the walled site of Hougang indicates a high population density, estimating that at least 3000 people lived at Hougang. He also suggested that there was a high population density in the Huanghe River valley during the Longshan Period. He estimated that at least 3000 people lived at Hougang. I agree with Wiesheu (1993) that this estimate seems too high. Qu (1989) did not consider the possibility that all of the houses at Hougang were not occupied at the same time. Figures 3–5 show that this is likely, with the evidence for rebuilding episodes. The relatively low population density represented by the sample of houses at the walled site of Hougang also suggests that the terms “city” and “urbanism” are not appropriate for Longshan sites in the Huanghe River valley.

Each period at Hougang and Baiying is characterized by a wide range in house floor area (Tables 6, 7 [my calculations from data in the reports]). Large houses

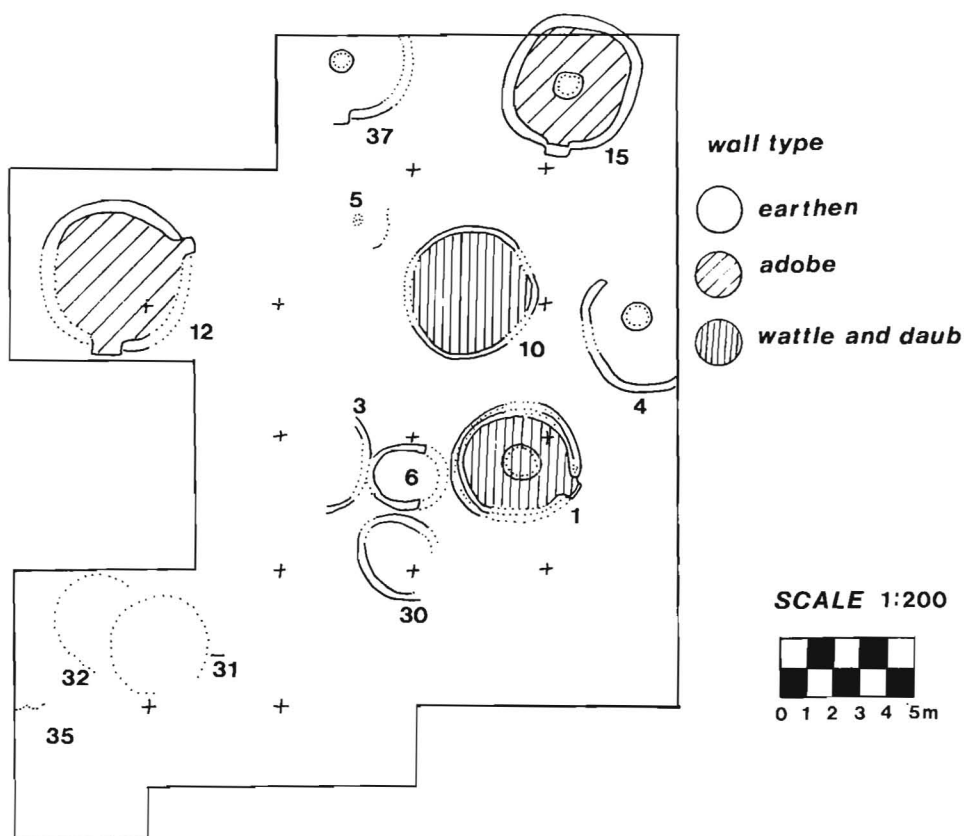


Fig. 5. Houses from the Later Phase of the Late Period (layer 3) at Hougang (after Anyang Archaeological Team, IA, CASS 1985:36, fig. 3). Numbers shown are numbers assigned to houses. Each small circle represents a hearth. Wall type unknown for houses 5 and 31.

are not in a restricted location during each period at the two sites (Figs. 3–6). Comparison of wall construction material with size at Hougang (Fig. 7) indicates that adobe houses are the largest in size by the Late Period (Late 4 and Late 3). If the wall around Hougang was built at the end of the Middle Period, this event may have been followed by more efforts to display status in housing.

Data for the earlier periods at Baiying are sparse (Fig. 8). Contrary to my expectations, the largest houses from the Early and Middle periods are earthen. This wall construction material is not present during the Late Period. Adobe appears by the Late Period, but it is not the construction material used for the largest house. The Late Period at Baiying is also characterized by a more narrow range in floor size. It is possible that display of status by means of housing does not characterize the Late Period (or earlier periods) at Baiying.

Of course, a larger sample of houses per phase at each site would strengthen conclusions about change in status differentiation over time. It would also be more appropriate to compare differentiation in housing on the basis of size and wall construction material for sites that are part of the same regional settlement system. Displaying status by means of housing may have been a more common

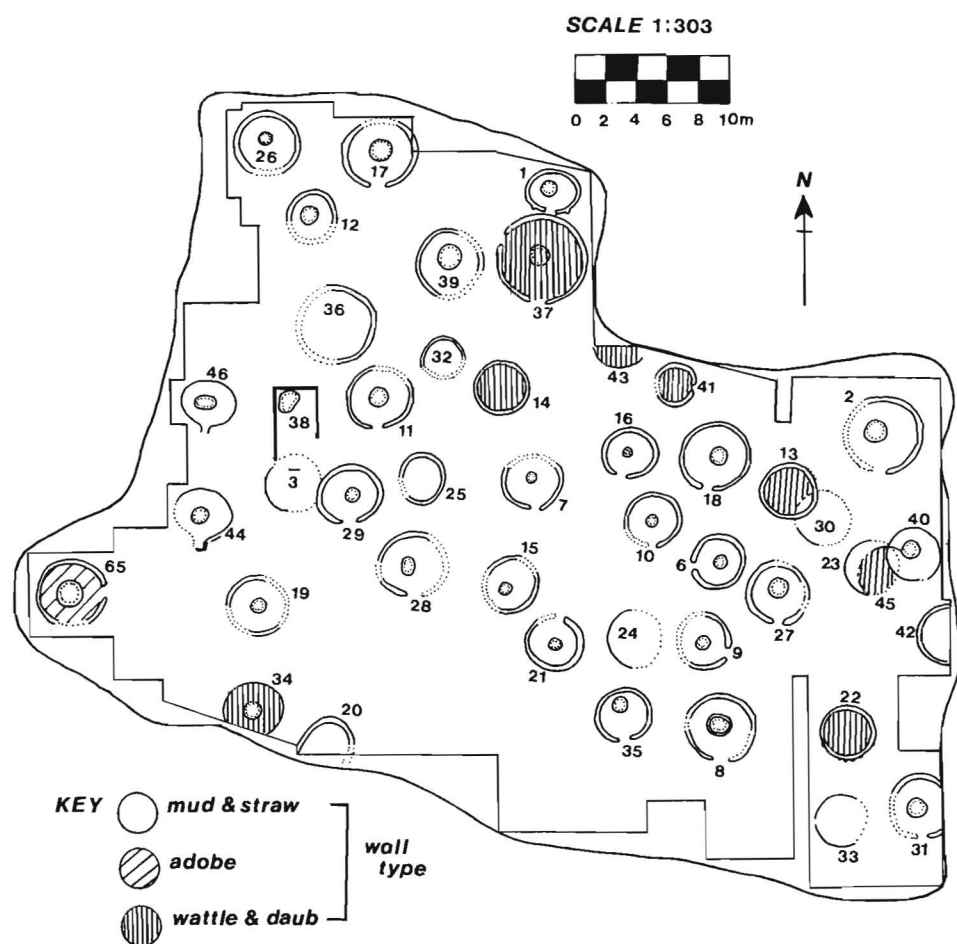


Fig. 6. Houses from the Late Period at Baiying (after CPAM of Anyang District, Henan Province 1983:2, fig. 2). Numbers shown are numbers assigned to houses. Each small circle represents a hearth. Wall type unknown for house 3.

TABLE 6. AREA OF CIRCULAR HOUSES AT HOU GANG BY TYPE OF WALL CONSTRUCTION MATERIAL

TYPE OF MATERIAL	PERIOD		
	MIDDLE (LAYER 5)	LATE (LAYER 4)	LATE (LAYER 3)
Earthen	13.9–21.7 m ² (n = 8)	11.3–20.9 m ² (n = 5)	8.0–17.3 m ² (n = 3)
Wattle and daub	15.9 m ² (n = 1)	11.2–18.8 m ² (n = 4)	14.5–18.8 m ² (n = 3)
Adobe	10.2–21.2 m ² (n = 2)	23.7 m ² (n = 1)	23.7–21.7 m ² (n = 2)
Total with size data	11	10	8

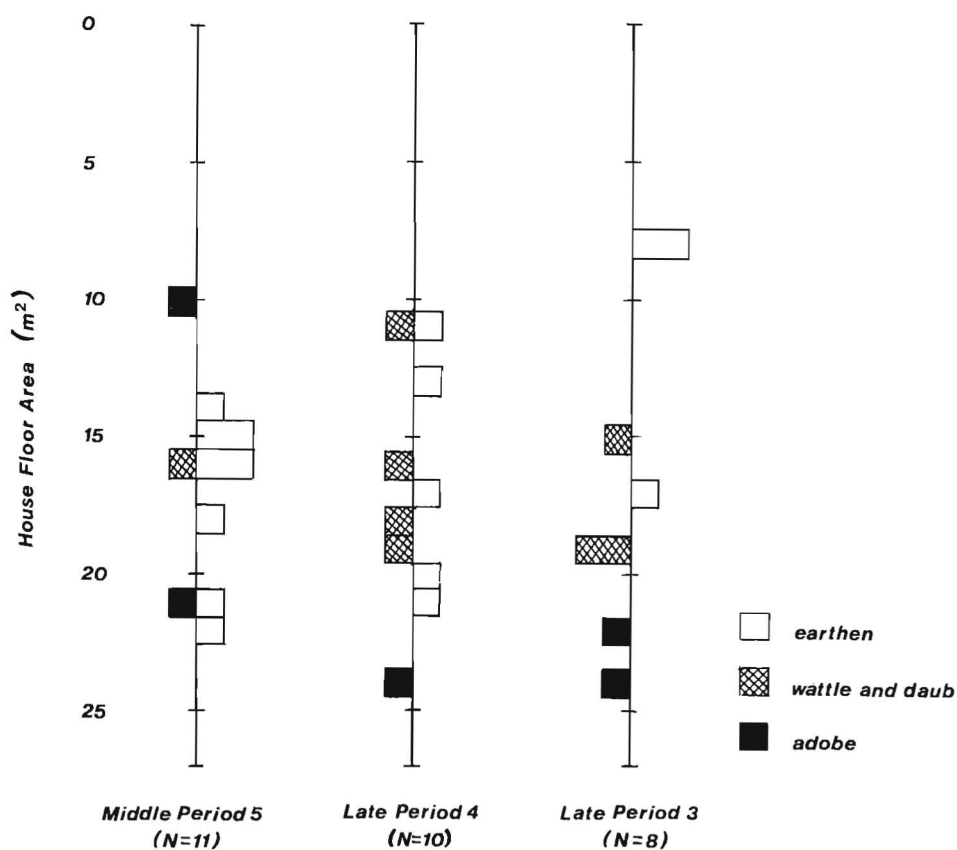


Fig. 7. House floor area by wall construction material at Hougang.

TABLE 7. AREA OF CIRCULAR HOUSES AT BAIYING BY TYPE OF WALL CONSTRUCTION MATERIAL

TYPE OF MATERIAL	PERIOD		
	EARLY	MIDDLE	LATE
Earthen	4.9–28.3 m ² (n = 4)	30.2 m ² (n = 1)	(n = 0)
Mud and straw	(n = 0)	6.0–11.3 m ² (n = 5)	6.2–20.1 m ² (n = 32)
Wattle and daub	(n = 0)	6.9–12.6 m ² (n = 2)	4.2–21.2 m ² (n = 8)
Adobe	(n = 0)	(n = 0)	15.9 m ² (n = 1)
Unknown	7.1–19.3 m ² (n = 3)	(n = 0)	(n = 0)
Total	7	8	41

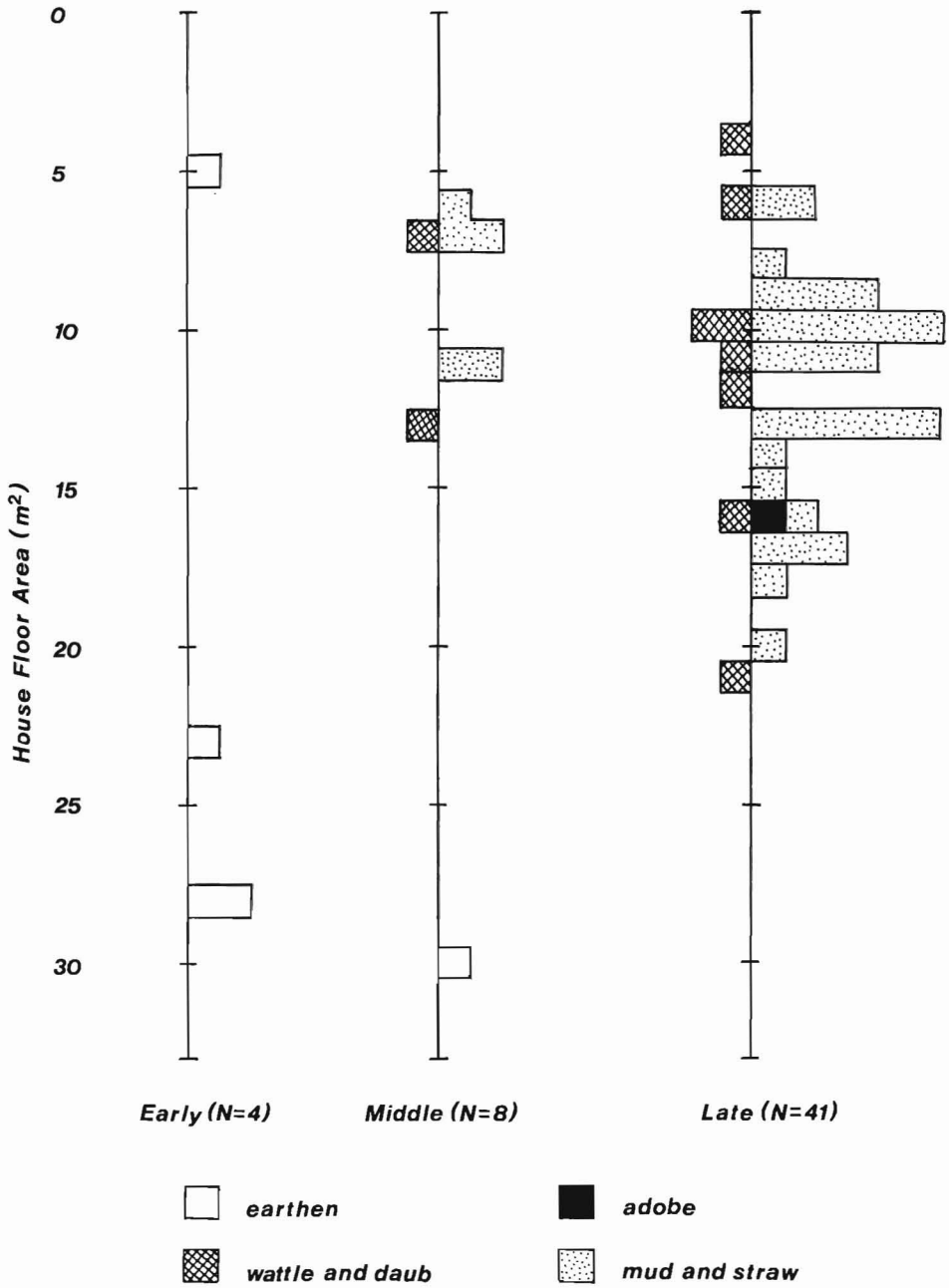


Fig. 8. House floor area by wall construction material at Baiying.

social strategy at centers of settlement as hypothesized for Hougang than at other sites such as Baiying. Also, major centers may exhibit more differentiation in housing than minor centers. Walled sites like Hougang without any evidence of structures with rammed-earth foundations and a limited degree of differentiation in housing may have been minor centers.

CONCLUSIONS

This paper analyzes and synthesizes variation in walled settlements from the Longshan Period of the Huanghe River valley, a period characterized by the development of complex societies. It proposes that relatively large sites with walls of rammed earth represent centers of settlement hierarchies. I suggest that it is more appropriate to refer to these settlements as "towns" rather than "cities." There is variation in date of construction, size of walled enclosures, structural features, and deposits. More fieldwork at these important sites should continue to provide information about site boundaries, settlement layout, the functions of structures (such as elite and nonelite residences), and areas for craft production. More archaeological evidence for activities of elites at these settlements is needed. For example, competition among elites to control production, distribution, and consumption of prestige goods should be investigated. More information on the kinds of activities that took place at sites is necessary to resolve debates about site function. These issues are relevant for interpretation of Early Dynastic Period settlements in the Huanghe River valley as well.

It is also necessary to consider the regional settlement system rather than the settlement as the unit of analysis in investigating development of sociopolitical complexity in the Huanghe River valley. Studies in other areas have shown that systematic regional site survey can identify settlement hierarchies and change over time in regional sociopolitical organization. The hypotheses I present regarding variation in walled settlements should be assessed with data obtained from regional settlement survey. Studies on development of sociopolitical complexity would be beneficial in a number of regions of the Huanghe River valley.

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NOTES

1. In other areas, the emergence of states appears to be recognizable by a change from a markedly convex rank-size graph representing poorly integrated competing centers of similar size to a slightly convex graph representing the development of dominant centers with greater political control over the region (Wright 1986).
2. The Early Period at Baiying and the Middle Period at Hougang date to c. 2500-2300 B.C., and the Middle Period at Baiying and the Late Period at Hougang date to c. 2300-2200 B.C. The Late Period at Baiying dates to c. 2200-2100 B.C. (Underhill 1990a; see radiocarbon dates in Zhang and Zhang 1986).
3. There are data for each occupation phase at Hougang. However, change over time in spatial location of possible elite houses at Baiying cannot be assessed. The report does not indicate the location of houses from the Early and Middle Periods.

REFERENCES

- AN JINHUAI
1983 Jinnian lai Henan Xia Shang Wenhua kaogu de xin shouhuo [Results of recent archaeological research on Xia and Shang Culture in Henan]. *Wenwu* 3:1-7.

- 1986 The Shang City at Cheng-chou and related problems, in *Studies of Shang Archaeology*: 15–48, ed. K. C. Chang. New Haven: Yale University Press.
- 1989 Shilun Henan diqu Longshan Wenhua de shehui xingzhi [A preliminary discussion of the nature of society in the Henan Longshan Culture]. *Zhongyuan Wenwu* 1:20–24.
- ANYANG ARCHAEOLOGICAL TEAM, IA, CASS
- 1985 1979 nian Anyang Hougang yizhi fajue baogao [Report of the excavation of Hougang at Anyang, 1979]. *Kaogu Xuebao* 1:33–88.
- ARCHAEOLOGICAL GROUP OF THE CHANGWEI AREA AND THE MUSEUM OF ZHUCHENG COUNTY
- 1980 Shandong Zhucheng Chengzi yizhi fajue baogao [Report on the excavation of the Chengzi site at Zhucheng, Shandong]. *Kaogu Xuebao* 3:329–385.
- BARNES, G.
- 1993 *China, Korea and Japan: The Rise of Civilization in East Asia*. New York: Thames and Hudson.
- BLAKE, M.
- 1988 Household features and social processes in a modern Maya community, in *Ethnoarchaeology among the Highland Maya of Chiapas, Mexico*: 45–60, ed. T. Lee, Jr., and B. Hayden. Papers of the New World Archaeological Foundation No. 56. Provo, Utah: New World Archaeological Foundation.
- BRUMFIEL, E., AND T. K. EARLE
- 1987 Specialization, exchange, and complex societies: An introduction, in *Specialization, Exchange, and Complex Societies*: 1–9, ed. E. Brumfiel and T. K. Earle. Cambridge: Cambridge University Press.
- CAO GUILING
- 1990 Huaiyang Pingliangtai yizhi shehui xingzhi tanxi [An analysis of the nature of society at the Pingliangtai site at Huaiyang]. *Zhongyuan Wenwu* 2:89–92.
- CARNEIRO, R.
- 1987 Further reflections on resource concentration and its role in the rise of the state, in *Studies in the Neolithic and Urban Revolutions: The V. Gordon Childe Symposium, Mexico, 1986*: 245–260, ed. L. Manzanilla. Oxford, England: BAR International Series No. 349.
- CHANG, K. C.
- 1980 *Shang Civilization*. New Haven: Yale University Press.
- 1983a Sandai archaeology and the formation of states in Ancient China: Processual aspects of the origins of Chinese civilization, in *The Origins of Chinese Civilization*: 495–521, ed. D. Keightley. Berkeley: University of California Press.
- 1983b *Art, Myth, and Ritual*. Cambridge: Harvard University Press.
- 1986 *The Archaeology of Ancient China*, 4th ed. New Haven: Yale University Press.
- COSTIN, C.
- 1991 Craft specialization: Issues in defining, documenting, and explaining the organization of production, in *Archaeological Method and Theory*, Vol. 3:1–55, ed. M. Schiffer. Tucson: University of Arizona Press.
- CPAM OF ANYANG DISTRICT, HENAN PROVINCE
- 1983 Tangyin Baiying Henan Longshan Wenhua cunluo yizhi fajue baogao [Excavation report of the Longshan Culture community site Baiying, at Tangyin, Henan]. *Kaoguxue Jikan* 3:1–50.
- CULTURAL GAZETTEER OF LINZI (LINZI WENWU ZHI)
- 1990 Gu wenhua yizhi [Ancient cultural sites], in *Linzi Wenwu Zhi*: 20–30. Jinan, Shandong: China Friendship Press.
- DU ZHENGSHENG
- 1991 Xia Dai kaogu jiqi guojia zhan de tansuo [An exploratory discussion about archaeology of the Xia Dynasty and development of the state]. *Kaogu* 1:43–56.
- EARLE, T.
- 1987 Chiefdoms in archaeological and ethnohistorical perspective. *Annual Review of Anthropology* 16:279–308.
- 1991 The evolution of chiefdoms, in *Chiefdoms: Power, Economy, and Ideology*: 1–15, ed. T. Earle. New York: Cambridge University Press.
- EDITORIAL DEPARTMENT OF KAOGU
- 1992 Zhongguo wenming qi yuan yantaohui jiyao [Summary of a forum on the origins of civilization in China]. *Kaogu* 6:526–549.

FEINMAN, G.

- 1991 Demography, surplus, and inequality: Early political formations in highland Mesoamerica, in *Chiefdoms: Power, Economy, and Ideology*: 229–262, ed. T. Earle. New York: Cambridge University Press.

FEINMAN, G., AND J. NEITZEL

- 1984 Too many types: An overview of sedentary prestate societies in the Americas, in *Advances in Archaeological Method and Theory*, Vol. 7: 39–102, ed. M. Schiffer. New York: Academic Press.

HE ZHANGFENG

- 1989 Youguan wo guo zaoqi chengshi tansuo zhong de jige wenti [A few issues concerning the investigation of early cities in our country]. *Kaogu Yu Wenwu* 4:91–96.

HENAN PROVINCE CULTURAL RESEARCH INSTITUTE AND THE ARCHAEOLOGY DEPARTMENT, MUSEUM OF CHINESE HISTORY

- 1983 Dengfeng Wangchenggang yizhi de fajue [Excavation of the Wangchenggang site at Dengfeng]. *Wenwu* 3:8–20.
1992 *Dengfeng Wangchenggang Yu Yangcheng* [The Wangchenggang Site at Dengfeng and the Site of Yangcheng]. Beijing: Cultural Relics Publishing House.

HENAN PROVINCE CULTURAL RESEARCH INSTITUTE AND THE CULTURAL OBJECTS DIVISION OF THE ZHOUKOU DISTRICT

- 1983 Henan Huaiyang Pingliangtai Longshan Wenhua chengzhi shijue jianbao [Preliminary report on the test excavations at the Longshan Culture city site of Pingliangtai at Huaiyang, Henan]. *Wenwu* 3:21–36.

HENAN PROVINCE CULTURAL RESEARCH INSTITUTE AND THE DEPARTMENT OF HISTORY, ZHENGZHOU UNIVERSITY, ARCHAEOLOGY SPECIALTY

- 1983 Yuxian Wadian yizhi fajue jianbao [Preliminary report on the excavation of the Wadian site, Yuxian County]. *Wenwu* 3:37–48.

HENAN PROVINCE CULTURAL RESEARCH INSTITUTE AND THE YANCHENG COUNTY MEMORIAL HALL OF XU SHEN

- 1992 Yancheng Haojiatai yizhi de fajue [Excavation of the Haojiatai site at Yancheng]. *Huaxia Kaogu* 3:62–91.

HUBER, L.

- 1988 The Bo capital and questions concerning Xia and early Shang. *Early China* 13:46–77.

INSTITUTE OF ARCHAEOLOGY, SHANDONG PROVINCE

- 1990 Shandong Linqu Zhufeng Longshan Wenhua muzang [Burials of the Longshan Culture at Zhufeng, Linqu, Shandong]. *Kaogu* 7:587–594.

KAMP, K.

- 1987 Affluence and image: Ethnoarchaeology in a Syrian village. *Journal of Field Archaeology* 14(3):283–296.

LI CHI, ed.

- 1956 *Ch'eng-tzu-yai: The Black Pottery Culture Site at Lung-shan-Chen in Li-Ch'eng-Hsien, Shantung Province*, trans. K. Starr. Yale University Publications in Anthropology No. 52. New Haven: Yale University Press.

LI XIANDENG

- 1983 Dengfeng Gaocheng Wangchenggang yizhi de chubu fenxi [A preliminary analysis of the site of Wangchenggang at Dengfeng, Gaocheng], in *Zhongguo Kaogu Xuehui Di Si Ci Nianhui Lunwenji* [A Collection of Papers from the Fourth Year of the Chinese Archaeological Society Meetings]: 7–12. ed. Chinese Archaeology Editing Group. Beijing: Cultural Relics Press.

MA SHIZHI

- 1992 Zhongwai wenming qi yuan wenti duibi yanjiu [A comparative study on the question of origins of Chinese and foreign civilizations]. *Zhongyuan Wenwu* 3:58–66.

MCGUIRE, R.

- 1983 Breaking Down Cultural Complexity: Inequality and Heterogeneity, in *Advances in Archaeological Method and Theory*, Vol. 6:91–142, ed. M. Schiffer. New York: Academic Press.

MCINTOSH, R.

- 1991 Early urban clusters in China and Africa: The arbitration of social ambiguity. *Journal of Field Archaeology* 18:199–212.

NETTING, R. MCC.

- 1982 Some home truths on household size and wealth. *American Behavioral Scientist* 25(6): 641-662.

OLSEN, J.

- 1987 The practice of archaeology in China today. *Antiquity* 61(232): 282-290.

PEARSON, R., AND A. UNDERHILL

- 1987 The Chinese Neolithic: Recent trends in research. *American Anthropologist* 89(4): 807-822.

QU YINGJIE

- 1989 Lun Longshan Wenhua shiqi gu chengzhi [A discussion of the ancient city sites from the Longshan Culture Period], in *Zhongguo Yuanshi Wenhua Lunji* [Essays on Chinese Primitive Culture]: 267-280, ed. C. Tian and S. Shi. Beijing: Cultural Relics Press.

RENFREW, C.

- 1986 Introduction: Peer polity interaction and socio-political change, in *Peer Polity Interaction and Socio-Political Change*: 1-18, ed. C. Renfrew and J. Cherry. New York: Cambridge University Press.

RENMIN RIBAO (PEOPLE'S DAILY)

- 1985 Shandong faxian siqian nianqian de gu chengbao yizhi [Discovery of a four thousand year old ancient castle site in Shandong]. *Renmin Ribao*, 3 January.
1986 Henan fajue chu Longshan Wenhua yizhi [Excavation of a Longshan Culture site in Henan]. *Renmin Ribao*, 18 December.

SANDERS, W., AND D. WEBSTER

- 1988 The Mesoamerican urban tradition. *American Anthropologist* 90(3): 521-546.

SECOND HENAN ARCHAEOLOGICAL TEAM, IA, CASS

- 1982 Henan Linru Meishan yizhi fajue baogao [Report on the excavation of the Meishan site in Linru, Henan Province]. *Kaoguxue Baogao* 4: 427-476.

SHANDONG UNIVERSITY, DEPARTMENT OF HISTORY, ARCHAEOLOGY SPECIALTY

- 1992 Shandong Zouping Dinggong yizhi di er, san ci fajue jianbao [Preliminary report on the second and third excavation of the Dinggong site at Zouping, Shandong]. *Kaogu* 6: 496-504.
1993 Shandong Zouping Dinggong yizhi di si, wu ci fajue jianbao [Preliminary report on the fourth and fifth excavation of the Dinggong site at Zouping, Shandong]. *Kaogu* 4: 295-299.

SHANDONG UNIVERSITY, DEPARTMENT OF HISTORY, ARCHAEOLOGY SPECIALTY AND THE ZOUPING COUNTY BUREAU OF CULTURAL RELICS

- 1989 Shandong Zouping Dinggong yizhi shijue jianbao [Preliminary report on test excavations at the site of Dinggong at Zouping, Shandong]. *Kaogu* 5: 391-398.

SPENCER, C.

- 1990 On the tempo and mode of state formation: Neoevolutionism considered. *Journal of Anthropological Archaeology* 9: 1-30.

STEPONAITIS, V.

- 1991 Contrasting patterns of Mississippian development, in *Chiefdoms: Power, Economy, and Ideology*: 193-228, ed. T. Earle. New York: Cambridge University Press.

SUI YUREN

- 1988 Huanghe zhongxiayou Longshan Wenhua chengbao chutan [A preliminary exploration of the Longshan Culture "castles" from the middle and lower reaches of the Yellow River]. *Zhongyuan Wenwu* 4: 46-52.

TIAN CHANGWU

- 1986 The legends of Yao and Shun and the origins of Chinese civilization, trans. Robert Chard. Paper presented at the Conference on Ancient China and Social Science Generalizations, Airlie House, Va., 21-27 June.

THORP, R.

- 1991 Erlitou and the search for Xia. *Early China* 16: 1-38.

TRIGGER, B.

- 1990 Monumental architecture: A thermodynamic explanation of symbolic behavior. *World Archaeology* 22(2): 119-132.

UNDERHILL, A. P.

- 1989 Warfare during the Chinese Neolithic period: A review of the evidence, in *Cultures in Conflict: Current Archaeological Perspectives*: 229–237, ed. D. Tkaczuk and B. Vivian. Calgary, Alberta: University of Calgary.
- 1990a Changing Patterns of Pottery Production during the Longshan Period of Northern China, ca. 2500–2000 B.C., Ph.D. diss. University of British Columbia, Vancouver, B.C., Canada.
- 1990b Archaeological evidence for evolution of the Xia state: A discussion. Paper presented at the International Symposium on Xia Culture, University of California, Los Angeles, 23–25 May.
- 1991 Pottery production in chiefdoms: The Longshan Period in northern China. *World Archaeology* 23(1): 12–27.
- 1992 Regional growth of cultural complexity during the Longshan Period of northern China, in *Pacific Northeast Asia in Prehistory: Hunter-Fisher-Gatherers, Farmers and Socio-Political Elites*: 173–178, ed. C. M. Aikens and S. N. Rhee. Pullman: Washington State University Press.
- 1995 Craft production and social evolution during the Longshan Period of northern China, in *Craft Specialization and Social Evolution: In Memory of V. Gordon Childe*, ed. B. Wailes. Philadelphia: University Museum Monographs, University of Pennsylvania (forthcoming).

WANG ENTIAN et al.

- 1993 Zhuanjia bitan Dinggong yizhi chutu tao wen [A discussion with specialists about the inscription on the pottery sherd from the Dinggong site]. *Kaogu* 4: 344–354, 375.

WHEATLEY, P.

- 1971 *The Pivot of the Four Quarters*. Edinburgh: University of Edinburgh Press.

WIESHEU, W.

- 1990 El problema del origen del estado en China. *Estudios de Asia y Africa* 81(1): 105–115.
- 1993 China's first cities: The walled site of Wangchenggang in the Central Plains region of North China. Paper prepared for the Symposium: Emergence and Change in Early Urban Societies, 13th International Congress of Anthropological and Ethnological Sciences, Mexico City, 29 July–5 August.

WRIGHT, H. T.

- 1984 Prestate political formations, in *On the Evolution of Complex Societies: Essays in Honor of Harry Hoijer 1982*: 41–77, ed. T. K. Earle. Malibu, CA: Undena Publications.
- 1986 The evolution of civilizations, in *American Archaeology Past and Future*: 323–365, ed. D. Meltzer, D. Fowler, and J. Sabloff. Washington: Smithsonian Institution Press.

YAN WENMING

- 1981 Longshan Wenhua he Longshan Shidai [The Longshan Culture and the Longshan Period]. *Wenwu* 6: 41–48.
- 1986 Unity and diversity in Chinese Neolithic Culture, trans. T. Kleeman. Paper prepared for the Conference on Ancient China and Social Science Generalizations, Airlie House, VA. 21–27 June.
- 1992 Luelun Zhongguo wenming de qiyuan [A brief discussion about the origins of Chinese civilization]. *Wenwu* 1: 40–49, 25.
- 1994 Longshan Shidai chengzhi de faxian yu Zhongguo wenming qiyuan de tansuo [A discussion on the origins of Chinese civilization and the discovery of walled city sites from the Longshan Period]. Paper prepared for the International Symposium on the Integration of Chinese Archaeology and History, Institute of History and Philology, Academia Sinica, Taipei, Taiwan, R.O.C., 4–8 January.

YOFFEE, N.

- 1993 Too many chiefs? (Or, safe texts for the '90s), in *Archaeological Theory: Who Sets the Agenda?*: 60–78, ed. N. Yoffee and A. Sherratt. New York: Cambridge University Press.

ZHANG XUEHAI

- 1993 Tai-Yi Shan bei ce de Longshan Wenhua cheng [Cities from the Longshan Culture on the northern side of the Tai-Yi Mountain]. *Zhongguo Wenwu Bao*, 5 May.

ZHANG YANHUANG AND ZHANG DAIHAI

- 1986 Zhongyuan diqu Longshan Wenhua de leixing he niandai [The types and ages of Longshan Culture in the Central Plain district], in *Zhongguo Kaoguxue Yanjiu. Xia Nai Xiansheng Kaogu Wushi Nianji Nian Lunwenji* [Research in Chinese Archaeology. A Collection of

Essays to Commemorate 50 Years of Archaeology with Mr. Xia Nai]: 46–56, ed. Editorial Committee of Archaeological Research in China. Beijing: Cultural Relics Press.

ZHONGGUO WENWU BAO

- 1992^a Lixian Chengtoushan Qujialing Wenhua chengzhi bei queren [Confirmation of a city site of the Qujialing Culture at Chengtoushan, Lixian County]. *Zhongguo Wenwu Bao*, 15 March.
- 1992^b Huixian Mengzhuang fajue Longshan Wenhua yizhi [Excavation of the Longshan Culture Site Mengzhuang at Huixian]. *Zhongguo Wenwu Bao*, 6 December.
- 1992^c Benbao pingchu jiu yi nian shi da kaogu xin faxian [A review of the ten most important archaeological discoveries in 1991 selected by this paper]. *Zhongguo Wenwu Bao*, 2 February.
- 1993 Erlitou zaoqi daxing jianzhu jizhi de faxian jiqi yiyi [The discovery and significance of the foundations of large-scale architecture from the Early Period at Erlitou]. *Zhongguo Wenwu Bao*, 28 February.

ABSTRACT

This paper analyzes and synthesizes variation in settlements during the Longshan Period of the Huanghe River valley, c. 2600–1900 B.C. Large, walled sites that were probably centers of settlement hierarchies have been found in several areas. There is variation in date of construction, size, kinds of structures present, remains of craft production, and kinds of prestige goods. Differences in site function may be represented. I suggest methods that archaeologists could use to investigate the development of sociopolitical complexity in the Huanghe River valley involving changes in architectural features and in regional settlement patterns. These methods require detailed information on internal settlement organization and data from systematic regional survey. For houses at two sites, wall construction material and floor size are examined in an effort to investigate change in status differentiation over time. **KEYWORDS:** Longshan Period of northern China, analysis of settlements, development of sociopolitical complexity.